

WAYS TO PREVENT RESPIRATORY PROBLEMS AMONG WORKERS OF COTTON INDUSTRY

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ABSTRACT

Organic cotton dust contains endotoxins that are believed to cause most of the symptoms, disturbed lung functions, organic dust toxic syndrome and obstructive pattern of lung diseases having features of asthma and chronic obstructive pulmonary disease. Cotton industry basically produces cloth from the cotton grown in the fields. Dust arising in cotton industry contains mainly micro-dust, which comprises 50-80% fiber fragments, leaf and husk fragments, 10-25 % sand and earth and 10-25 % water-soluble materials. The high proportion of fiber fragments indicates that a large part of the micro-dust arises in the course of processing in cotton industry. "Cotton dust" is defined as dust generated into the atmosphere as a result of the processing of cotton fibers combined with any naturally occurring materials such as stems, leaves, bracts, and inorganic matter which may have accumulated on the cotton fibers during the growing or harvesting period. Exposure of workers to fine dust in cotton industry usually results in to development of respiratory problems in industry workers. It is suggested that the employer's should take note of their workers and diverse measures can be carried out to reduce the exposure of cotton dust consisting of dust manage, engineering manipulate, and use of personal protecting gadget.

Key words: respiratory problems, cotton dust, byssinosis, respiratory symptoms.

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INTRODUCTION

Hazardous effects in the cotton industry, particularly on the respiratory tract, were reported 300 years ago. A specific respiratory syndrome in that industry was called byssinosis and Schilling first classified byssinosis based on respiratory symptoms. Organic cotton dust contains endotoxins that are believed to cause most of the symptoms, disturbed lung functions, organic dust toxic syndrome and obstructive pattern of lung diseases having features of asthma and chronic obstructive pulmonary disease.

Cotton industry basically produces cloth from the cotton grown in the fields. Cotton is a fiber that grows in a seed pod, when the pod pops open, the cotton is ready for picking, the further processing of cotton in to ready cloth for use involves complex processes such as cotton picked at field level is transported to cotton mill where cotton will be cleaned off from seed then delivered to opening room of the textile mill. In opening room the bale opener uses machine to break the straps and loosen the tightly packed cotton. Once the cotton is loosened, then it is put in to picker machine, here cotton be converted to long continuous sheet called lap. The lap is then rolled in to large round packages. Further the cotton lap package are moved to carding room in which the laps are converted to long untwisted strands of cotton, the untwisted strands of cotton are combed and blended, then it will be sent to machines called roving frames which makes the blend sheet of cotton in to thin yarn which will be twisted and wound on bobbins, then bobbin will be made stiff and strong by applying a protective starch solution, this yarn bobbin will be placed on to one loom beam which then taken in to weaving department to weave cloth. The woven cloth is then graded on the bases of quality and it will be prepared for the shipment to clothing or sheet manufacturers. Byssinosis is rare lung disease which is caused by inhalation of hemp, flax, and cotton particles.

Dust arising in cotton industry contains mainly micro-dust, which comprises 50-80% fiber fragments, leaf and husk fragments, 10-25 % sand and earth and 10-25 % water-soluble materials. The high proportion of fiber fragments indicates that a large part of the micro-dust arises in the course of processing in cotton industry.

“Cotton dust” is defined as dust generated into the atmosphere as a result of the processing of cotton fibers combined with any naturally occurring materials such as stems, leaves, bracts, and inorganic matter which may have accumulated on the cotton fibers during the growing or harvesting period. Exposure of workers to fine dust in cotton industry usually results in to development of respiratory problems in industry workers. Respiratory diseases due to cotton dust inhalation produces the symptoms such as chronic cough, progressive dyspnea, chest tightness, cough and dyspnea and it also may lead to chronic bronchitis, emphysema. If the worker ignores the recurrent respiratory problems and symptoms it may lead to many complications such as asthma, pneumothorax, lung cancer etc.

At present the prevalence of respiratory problems has decreased significantly in developed countries; but it is still high in developing ones in the reported rates vary from 30-50% in countries like Indonesia, Sudan and India. It is very important to India to prevent the respiratory problems in the workers of cotton industries by practicing safety measures like-

- ❖ Wearing the mask.
- ❖ Pre placement examination.
- ❖ Periodical examination of the workers with health personnel.
- ❖ Periodical cleaning and maintenance of the machines.
- ❖ And maintaining uniform disciplines.

Any dust generated from the processing of cotton through the weaving of fabric in textile mills and dust generated in other operations or manufacturing processes using new or waste cotton fibers or cotton fiber by-products from textile mills is also considered cotton dust.

DEFINITION:

Cotton dust may cause adverse health effects through inhalation. Short term exposure to cotton dust has caused bronchitis and acute byssinosis a reversible respiratory disease produced by inhalation of cotton dust. Cotton dust is defined as dust generated into the atmosphere because of processing the cotton fibers blended with any obviously happening materials which include stems, leaves, bracts, and inorganic rely which can also have accrued at the cotton fibers at some stage in developing and harvesting period¹. In step with occupational protection and health management, the permissible publicity restriction for cotton dirt is two hundred µg per cubic meter of lint-loose respirable dirt averaged over an 8-h duration in yarn production; 750 µg consistent with cubic meter of lint-free respirable dust over an 8-h duration of slashing and weaving; and 500 µg consistent with cubic meter of lint-loose respirable dust over an 8-h length in waste homes and yarn manufacturing where exposure to lower grade washed cotton takes place.

Health problems among the workers in cotton industries.

Short term (Acute): Exposure to cotton dust can produce

- A feeling of chest tightness,
- Coughing,

ARTICLES

- Wheezing, Phlegm,
- Weakness, Fever Chills, and
- Breathing Difficulty (dyspnea).
- Monday morning fever

Long term (Chronic):

Exposure to cotton dust can cause permanent and disabling breathing difficulties that include Chronic bronchitis with emphysema.

Byssinosis.

Complications:

- Lung Scarring

Prevention and management:

Regular medical examination.

Periodical tests such as pulmonary function tests.

Environmental Exposure monitoring

- Sampling of the workplace must be done at least every six months.
- Measures like face masks and dust control may reduce the chances for byssinosis
- Smoking should be avoided.
- Exposure to the dust should be discontinuing.
- Ventilation and exhaust hoods need to be used.
- Follow the norms of occupational safety and industrial rules.
- Strict use of protective measures.

CONCLUSION:

Cotton industry employers should take note of their workers and diverse measures can be carried out to reduce the exposure of cotton dust consisting of dust manage, engineering manipulate, and use of personal protecting gadget. Its common practice that the cotton enterprise with cotton debris at the body and multiple instances had been admitted inside the health center and whilst taking history it changed into found that they had been operating inside the cotton industry. They employees must offer the instructional material for prevention of respiratory signs and disorders.

REFERENCES

1. Basavanthappa,B.T. (2003). Community health nursing. (2nd ed). Newdelhi: Jaypee Bhaskara Rao's.Community Medicine. (1st ed). Newdelhi: Paras Publishing.
2. Bruner And Suddarth.(1996). Medical Surgical Nursing.8th Edition. Philadelphia: Mosby's Company
3. Burns Nancy And Susan.K.Grove. (1990). Nursing Research. (4th ed). Philadelphia: W.B.Saunders's.
4. Burns,N. & Groove,S.K. (1999). Understanding Nursing Research. (2nd ed). Philadelphia: W.B.Sounders Company.
5. Kasthuri Sundar Rao. (2000).Introduction To Community Health Nursing .(3rd ed). B.I.Publications.